

# Consolidated List of Recommendations

## Section 2—The National Interest in Relieving Transmission Bottlenecks

### Next Steps Toward Relieving Transmission Bottlenecks

- DOE, through a rulemaking, will determine how to identify and designate transmission bottlenecks that significantly impact national interests.
- DOE will further develop the analytic tools and methods needed for comprehensive analysis to determine national-interest transmission bottlenecks.
- In an open public process, DOE will assess the nation’s electricity system every two years to identify national-interest transmission bottlenecks.

## Section 3—Relieving Transmission Bottlenecks By Completing the Transition to Competitive Regional Wholesale Electricity Markets

### Establishing Regional Transmission Organizations

- RTOs should be responsible for maintaining the reliability of the grid and ensuring that transmission bottlenecks are addressed.
- DOE, with industry, will assess current system monitoring and control technologies that support efficient, reliable, and secure operation of RTOs and coordinate development of a plan for future research and development.
- DOE will work with FERC and stakeholders to develop objective standards for evaluating the performance of RTOs and will collect the information necessary for this assessment.
- DOE will work with the Energy Information Administration (EIA), FERC, National Governors Association (NGA), the National Association of Regulatory Utility Commissioners (NARUC), the National Association of State Energy Officials (NASEO), industry, and consumer representatives to determine what economic and reliability data related to the transmission and the electricity system should be collected at the federal level and under what circumstances these data should be made publicly available.
- NGA and NARUC should identify state laws that could hinder RTO development.
- DOE will review federal laws that may prevent PMAs from full participation in RTOs, direct them to participate in the creation of RTOs, and take actions to facilitate their joining RTOs.
- DOE will work with TVA to help it address any issues that inhibit its participation in wholesale competitive markets, including full participation in an RTO.

## Increasing Regulatory Certainty and Focus

- DOE will work with NGA, regional governors' associations, NARUC, and other appropriate state-based organizations to promote innovative methods for recovering the costs of new transmission-related investments. These methods should consider situations where rate freezes are in effect and also examine incentive regulation approaches that reward transmission investments in proportion to the improvements they provide to the system.
- DOE will research and identify performance metrics and evaluate designs for performance-based regulation.
- The Department of Treasury should evaluate tax law changes related to electricity modernization. Treasury should review its current regulations regarding the application of private use limitations to facilities financed with tax exempt bonds in light of dynamics in the industry and proceed to update and finalize its regulations. This will give greater certainty to public power authorities providing open access to their transmission and distribution facilities.
- Entrepreneurial efforts to build merchant transmission lines that pose no financial risk to ratepayers and that provide overall system benefits should be encouraged.
- DOE and the Department of Treasury will evaluate whether tax law changes may be necessary to provide appropriate treatment for the transfer of transmission assets to independent transmission companies.

## Section 4—Relieving Transmission Bottlenecks Through Better Operations

### Pricing Transmission Services to Reflect True Costs

- DOE, working with FERC, will continue to research and test market-based approaches for transmission operations, including congestion management and pricing of transmission losses and other transmission services.

### Increasing the Role of Voluntary Customer Load Reduction, and Targeted Energy Efficiency and Distributed Generation

- DOE will work with FERC, the states, and industry and conduct research on programs and technologies to enhance voluntary customer load reduction in response to transmission system emergencies and market price signals.
- DOE will work with states and industry to educate consumers on successful voluntary load-reduction programs. DOE will disseminate information on successful approaches and technologies.
- DOE will continue to work with NGA, regional governors' associations, and NARUC to remove regulatory barriers to voluntary customer load-reduction programs, and targeted energy-efficiency and distributed-generation programs that address transmission bottlenecks and lower costs to consumers.

- IEEE should expeditiously complete its technical interconnection standards for distributed generation.
- DOE will work with NGA and NARUC to develop and promote the adoption of standard interconnection agreements, rules, and business procedures for distributed generation.

## Using Improved Real-Time Data and Analysis of Transmission System Conditions

- DOE will work with industry to demonstrate and document cost-effective uses of dynamic transmission system analysis.

## Ensuring Mandatory Compliance with Reliability Rules

- Federal legislation should make compliance with reliability standards mandatory.
- Current reliability standards should be reviewed in an open forum to ensure that they are technically sound, nondiscriminatory, resource neutral, and can be enforced with federal oversight.
- Penalties for noncompliance with reliability rules should be commensurate with the costs and risks imposed on the transmission system, generators, and end users by noncompliance. Penalties collected should be used to reduce rates for consumers.
- DOE will work with industry and NARUC to promote development and sharing of best transmission and distribution system operations and management practices.
- DOE will work with FERC, state PUCs, and industry to ensure the routine collection of consistent data on the frequency, duration, extent (number of customers and amount of load affected), and costs of reliability and power quality events, to better assess the value of reliability to the nation's consumers.

## Section 5—Relieving Transmission Bottlenecks Through Effective Investments

### Implementing Regional Transmission Planning

- DOE will work with the electricity industry and state and federal regulators to identify the type of electricity system data that should be made available in the planning process to facilitate the development of market-based transmission solutions and devise a process for making that information available.

### Accelerating the Siting and Permitting of Needed Transmission Facilities

- FERC and DOE should work with states, pertinent federal agencies, and Native American tribes to form cooperative regional transmission siting forums to develop regional siting protocols.

- Utilities and state utility commissions should develop an inventory of underutilized rights of way and space on existing transmission towers. DOE will work with PMAs and TVA to conduct a comparable evaluation.
- DOE will work with NGA, regional governors' associations, NARUC, and other appropriate state-based organizations to develop a list of "best practices" for transmission siting.
- DOE will undertake demonstration programs to support the use of innovative approaches to transmission planning and siting (e.g., open planning processes, consideration of a wide range of alternatives, incorporation of innovative or uncommonly employed technologies, use of alternative mitigation measures, etc.).
- Federal agencies should be required to participate in regional siting forums and meet these forums' deadlines for reviews or complete reviews within 18 months, whichever occurs first.
- All federal agencies with land management responsibilities or responsibilities for oversight of non-federal lands should assist FERC-approved RTOs in the development of transmission plans.
- Congress should grant FERC limited federal siting authority that could only be used when national-interest transmission bottlenecks are in jeopardy of not being addressed and where regional bodies have determined that a transmission facility is preferred among all possible alternatives.
- The Council on Environmental Quality should continue to coordinate efforts with the Secretary of the Interior, Secretary of Energy, Secretary of Agriculture, Secretary of Defense, and Administrator of the EPA to ensure that federal permits to construct or modify facilities on federal lands are acted upon according to timelines agreed to in any FERC-approved regional protocol. The agencies should work together to re-evaluate the development of transmission corridors across federal lands and identify the current and potential future use of existing transmission corridors on federal lands.

## Ensuring the Timely Introduction of Advanced Technologies

- DOE will work with NARUC to develop guidance for state regulators and utilities on evaluating the risks of investment in innovative new technologies that advance public interests. These guidelines will help determine when a technology is a reasonable performance risk and how to weigh the costs and benefits of using a new versus an established technology.
- The PMAs and TVA should maintain their leadership of demonstration efforts to evaluate advanced transmission-related technologies that enhance reliability and lower costs to consumers
- DOE will develop national transmission-technology testing facilities that encourage partnering with industry to demonstrate advanced technologies in controlled environments. Working with TVA, DOE will create an industry cost-shared transmission line testing center at DOE's Oak Ridge National Laboratory (with at least a 50% industry cost share).

- DOE will accelerate development and demonstration of its technologies, including high-temperature superconductivity, advanced conductors, energy storage, real-time system monitoring and control, voluntary load reduction technologies and programs, and interconnection and integration of distributed energy resources.
- DOE will work with industry to develop innovative programs that fund transmission-related R&D, with special attention to technologies that are critical to addressing transmission bottlenecks.

## Enhancing the Physical and Cyber Security of the Transmission System

- DOE will work with industry to evaluate the feasibility of adopting modular designs and standards for substation and other transmission equipment to facilitate rapid replacement.
- DOE and the national laboratories will continue to develop cost-effective technologies that improve the security of, protect against, mitigate the impacts of, and improve the ability to recover from disruptive incidents within the energy infrastructure.
- DOE will continue to develop energy infrastructure assurance best practices through vulnerability and risk assessments.
- DOE will work with industry to evaluate the costs and benefits associated with maintaining a reserve supply of transmission equipment that is funded by transmission rates. This reserve would be a resource in case of major outages resulting from terrorism or natural disasters.
- DOE will continue to work with industry to promote education and awareness in the industry about critical transmission infrastructure issues.
- DOE will continue to work closely with industry on implementation plans that respond to attacks on our transmission infrastructure.
- DOE will continue to provide training in critical infrastructure protection matters and energy emergency operations to state government agencies and to private industry.
- DOE will study the Eastern and Western AC Interconnections to assess the costs and benefits, including impacts on national security, of a series of smaller interconnections that are electrically independent of one another with DC links between them.
- DOE will work with industry and the states to develop standardized security guidelines to help reduce the cost of facility protection and facilitate consequence management.

## Section 6—DOE's Commitment and Leadership

- DOE will create an Office of Electric Transmission and Distribution.